

# **AIR OPERATIONS OVERVIEW AND PLAN**

## **STRATEGIC MANAGEMENT OF CHANGE**

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An applied research project submitted to the National Fire Academy  
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## **ABSTRACT**

The Los Angeles County Fire Department (Los Angeles, CA) marked the 40<sup>th</sup> anniversary of its air operations in 1997. The program has expanded from a single helicopter and one pilot in 1957 to its present size fleet of eight (8) helicopters and over forty (40) assigned personnel. It provides a 24-hour per day, 7-day a week multi-mission role of aerial firefighting and emergency medical service.

It became very clear to the writer after his assignment as the “Chief of Air Operations”, that the tremendous reputation of the air operations section was due to a series of very good “gut feeling” decisions by many executive level chief officers over the years and not due to any process, system or plan. The problem to correct was to prepare a document for executive staff use for improved decision making.

For future benefit of the air operations program it was determined that a goal and purpose would be to develop a long term plan similar to the master plan concept of planning for fire station locations, apparatus typing and staffing. This plan could be based on past practices and experience of what worked for the Department, but more importantly it was necessary to find out what other organizations with air programs were doing.

Descriptive, evaluative and action research methods were used in an attempt to answer questions regarding the current practices and policies of the air operations program, how to present concise but sufficient background of a technical speciality, how to identify a

rationale and/or criteria in formulating recommendations and to develop a document for executive level chief officers who will be making decisions about the air operations program.

The research published literature met with marginal results due to the limited amount of published material about fire service aviation programs. The major information sources were Department documents, training information, course and symposium work completed by the writer and some trends of the civil helicopter industry.

The results are the "Air Operations Overview and Plan: 1998-2010" presented in Appendix A of this applied research project. The plan has several air program categories written in a "stand alone" format which has each topic area being inclusive of its appropriate background, current practice or policy, criteria and/or a rationale and recommendations. The 17 recommendations from the 45-page plan are also summarized by topic category in the last section.

## TABLE OF CONTENTS

	PAGE
Abstract.....	i
Table of Contents.....	iii
Introduction.....	1
Background and Significance.....	3
Literature Review.....	5
Procedures.....	10
Results.....	13
Discussion.....	16
Recommendations.....	17
Reference List.....	18
Appendix A.....	20

## **INTRODUCTION**

The Los Angeles County Fire Department (Department) marked the 40<sup>th</sup> anniversary of its air operations in 1997. The program has expanded from a single helicopter and one pilot in 1957 to its present size fleet of eight (8) helicopters and over forty (40) assigned personnel. During most of that period of time the decisions made regarding the air operations program were made in the very traditional method of the American fire service, that is the fire chief deciding and the funding being present.

## **PROBLEM**

It became very clear to the writer after his assignment as the interim “Chief of Air Operations” more than 18 months ago, that the tremendous reputation of the air operations section was due to a series of very good “gut feeling” decisions by many executive level chief officers over the years and not due to any process, system or plan.

## **PURPOSE**

For the writer’s use as well as for the future of the Department and the air operations program it was determined that it was extremely necessary to develop a long term plan. This plan could be based on past practices and experience of what worked for the Department, but more importantly it was necessary to find out what other organizations with air programs were doing.

In a previous applied research project (APR) the writer thoroughly researched the history of the Los Angeles County Fire Department and its air operations program (Holdridge, 1997). In addition, extensive research was attempted on the existence and operations of any other aerial firefighting and/or emergency air medical services provided by other firefighting agencies and departments.

## RESEARCH METHODS AND QUESTIONS

The research for this applied research project and the development of a Department air operations plan is based on material presented in the course, *Strategic Management of Change*, specifically Module 2, “The Change Management Model.” Descriptive, evaluative and action research methods were used in an attempt to answer the following questions.

1. After reviewing the history of the air operations program, what are the current policies and operations in place [Descriptive]?
2. What would be the method of presenting extensive information about a specialty subject such as air operations within the fire service to a cadre of executive level chief officers [Descriptive]?
3. As part of a plan, what are the key points to offer as criteria in formulating recommendations to guide executive level chief officers in decision making about improvements to the air operations program [Evaluative]?

4. What would be the resulting document that would present the compilation of categories related to the air operations program to provide a concise overview, criteria and specific recommendations for the program [Action]?

## **BACKGROUND AND SIGNIFICANCE**

### **OVERVIEW**

The Los Angeles County Fire Department (Department) is experiencing unprecedented annexations of city fire departments into the Department as well as a boom in population growth within the County and the jurisdictions that it serves. Although always on the cutting edge of fire service air operations and considered by others to be a standout quality program, only proper planning, implementation and support will keep the Department's air operations program as a quality provider of emergency air services.

### **SIGNIFICANCE**

It is time to assess the air operations service that the Department provides and develop some means to measure where the program is now and where it should be in the future. The need for a "master plan" approach to air operations follows the fire service trend of resource allocation planning that includes the placement of fire station locations, apparatus type, staffing, etc. The "Air Operations Overview and Plan" (Plan) was

completed as part of the writer's assignment as the new manager to the air operations program. The Plan is to provide a heightened knowledge of the air operations program and to provide a background, rationale, criteria, recommendations, and most of all a plan to the Executive Staff of the Department in which to base future decisions regarding the air operations program.

The research and development of the Plan for a change in the management approach to the air operations program is based on the systematic method introduced in the *Strategic Management of Change* course. Module 2 presents the "Change Management Model" (CMM) and the four phases of analysis, planning, implementation and evaluation/institutionalism. The format of the CMM was used in developing the Plan and the writer's expectations are that based on this method that the criteria developed and the recommendations presented to the Executive Staff can be utilized to provide a better management tool to affect the air operations program.

## **LITERATURE REVIEW**

Based on the extensive literature review by the writer for the previous APR the limited body of knowledge written and published regarding this specialty area of air operations within the fire service was clearly established (Holdridge, 1997). For this applied research project and Plan development a search was again completed for any new information published in the past year since the previous ARP, again with marginal results of quantity and quality. The most effective approach was gained by breaking down the topic areas of the Plan and seeking out the most effective sources.

## **HISTORY AND BACKGROUND**

The Plan needed to have a concise, easy to read historical reflection of the air operations program over its previous forty years so that the Department's executive managers could have a quick reference for their use. In the previous ARP the writer spent time developing the history of the program based on various Department documents and two extensive personal interviews (Holdridge, 1997). Since the completion of the ARP one of the people interviewed for the historical background, Department Helicopter Pilot Gary Lineberry "published" on an Internet home page and in a firefighting journal a complete story about the forty-year history of air operations (Lineberry, 1997). This provided some additional information for the Plan, however the writer believes it was the original interview in 1996 that prompted Pilot Lineberry to develop his very well written history.

## MISSION ORIENTATION

This portion of the Plan is written as a quick reference to reflect in a condensed form some of the existing Department policies and procedures regarding air operations (Los Angeles County Fire Department, 1989). Examples of Department policies are the importance of identification and use of helispots on wildland fire incidents and the use of fly-crews. The variety of air operations missions listed is from an in-house document used to orient newly assigned pilot, maintenance unit and crewmember personnel (Air Operations, 1994). The helicopter fleet maintenance mission section is from a series of interviews conducted with the Douglas Mathews, Chief of Aircraft Maintenance (D. Mathews, interview, 1997).

## ADMINISTRATIVE OPERATIONS

The legal overview portion of the Plan contains factual information regarding the Federal Aviation Administration (FAA) regulatory requirements regarding aircraft flight worthiness, aircraft types, scheduled maintenance, flight operations and governmental aircraft operations (FAA symposium, 1995). The position and preference of the Department to continue its purchase and use of “standard category” type certificated versus “restricted category” military aircraft and parts in the fleet are discussed.

This position of the air operations program to maintain and continue to purchase only “standard category” type certificated helicopters is consistently borne out by industry

publications. Most all other public safety agency and department air programs use fixed-wing and rotary-wing aircraft from the Federal Excess Personal Property (FEPP) program.

The major concern with the military surplus issue is airframe and parts airworthiness and the possibility for reduced safety standards by public aircraft operators (Rettmann, 1997-98). The lack of continuity of parts history documentation, use and the potential for “bogus” parts raises concerns about airworthiness and a lack of safety (Powell, 1996; Rettmann, 1997-1998).

Reimbursable flight operations by government operated aircraft continues to be a controversial issue within public safety agency/department air operations throughout the country since the federal legislation was passed in 1994. Not only did FAA publications provide accurate information but the writer’s attendance at a week-long federal agency sponsored “Senior Level Aviation Management Course” in 1998 included presentations and printed material by subject experts on the current state of this issue.

## PERSONNEL AND STAFFING

The literature review regarding the different personnel groups of the air operations program which includes: pilots, fire fighter/paramedics, aircraft maintenance and administrative support were provided mainly by excerpts from assorted Department documents. The discussion of the helicopter maintenance mechanics and aircraft

maintenance were based on a combination of articles dealing with the current severe shortage of aircraft maintenance workers.

With military downsizing and fewer private schools involved with aircraft maintenance training the current work force will be in demand and for higher compensation packages (Harrison, 1998). This impacts the potential applicant pool to the Department substantially and explains that extremely poor turn out for the last hiring process.

The pilot and mechanic staffing ratio criteria were not arrived at by material published anywhere. This information was provided by timekeeping records calculated over time and annual “off” time due to sickness and/or injury to the pilot and maintenance staff. Additionally, interviews provided initial ideas of staffing needs which were later borne out by the timekeeping research (G. Lineberry, D. Mathews, 1997).

## AIRCRAFT FLEET

Topics covered within this section of the Plan include the deletion of a light helicopter from the fleet, preferences of helicopter model use and upgrades to the existing helicopters. The information about the helicopter fleet is drawn from Bell helicopter factory manuals and in-house documents including material from the orientation presentation provided to new personnel to the air operations program.

The discussion of the need for helicopters in the Department fleet to be “multi-mission” capable and the preferences by the pilot and maintenance staff for certain models

is based on a survey and research paper done by a pilot (Siegal, 1995). This contribution may be viewed as biased based on the writer's observation that any "user" group when asked what they would prefer to use may not present an objective statement of preference.

This is not to discredit the input from a user group, but it needs to be considered by management in the final decision making. One preference of the pilot and maintenance staff is for the flight performance characteristics and airframe layout of the twin-engine, four-blade Bell Model 412 for use as an emergency medical services (EMS) helicopter is substantiated in a worldwide distributed publication, "Helicopter World." The EMS mission considerations of patient care and airframe cabin size, power, speed and a comparison of new helicopter purchase prices make the Bell 412 a popular choice (Osmond, 1994).

## TRAINING

This section of the Plan presents to the Executive Staff the current training and the desired modifications to the air operations program staff. There is a lack of fire service literature that pertains to training of air operations personnel. Sources for training information involves discussions, workshops, in-house manuals, and legally binding agreements between the Department and the firefighters' union local.

## **PROCEDURES**

The purpose of this applied research project was to develop and write a master plan style document about the air operations program for use by executive level chief officers of the Department. The “Air Operations Overview and Plan” is based on using descriptive, evaluative and action research methodologies.

The first step was to review the currency of the writer’s extensive historic research last year completed for the previous APR of the writer, “Developing a Long Term Plan for Air Operations Program.” The writer used libraries and search programs which included; California State University, Long Beach - “COAST” and “Reference Network,” Orange County Public Library System - Periodical Index and the National Emergency Training Center Learning Resource Center.

As expected from the research of the previous APR, there was minimal new material published in the past year and again no applied research projects pertaining to air operations. Although the writer attempted a historical methodology for the current applied research project, so little was gained that the following steps involving descriptive, evaluative and action methodologies were relied upon to develop the Plan.

The second step was to use descriptive research to present the current status of the Department’s air operations program. Although part of the Department, the Executive Staff does not have any noticeable exposure to, or experience with the Department’s air operations program. It was imperative in the Plan that the presentations of practices and

technical information are concise for review but sufficient enough to provide the necessary background to show the basis for recommendations.

The third step involved in-house documents and the writer's own experience in the air program and related aviation project assignments of the past four years. Although the possibility of a subjective view and recommendations does exist, the writer's "newness" to fire service aviation in combination with the writers' skills and abilities which were reasons for his assignment as the interim manager should be considered to provide the Executive Staff a balanced and well based plan.

The fourth step of evaluative research demonstrates the basis, the calculations and the fire aviation industry's perspective to how and why the Department should implement the recommendations.

The fifth and last step of action research was to write, format and prepare the Plan for presentation to the Executive Staff of the Department. Because of the length and the complexity of certain topics, the final version of the Plan will be presented in an easy to use three-hole punch binder with labeled tab dividers. Each topic was written in a "stand alone" style that will permit the reader to turn to the particular topic of interest; review the significant background, current practice, criteria and any recommendations for that subject area. The last section of the Plan allows all 17 recommendations to be listed by subject area.

## LIMITATIONS

As in the writer's previous ARP experience regarding fire service aviation programs, there continues to be a significant lack of published material within the fire service literature. It is now clear to the writer that it is unique in the American fire service that a local governmental fire department has any type of aircraft operation. Nationwide, most firefighting air operations are seasonal efforts managed by state and federal departments and agencies responsible for wildland firefighting. Additionally, EMS air missions are most often provided and managed by hospital consortiums or private EMS operators.

In fact the only local fire department air operation programs found that did some form of dual wildland firefighting and EMS missions with helicopters were those of the Los Angeles City Fire Department (Los Angeles, California) and Metro Dade County Fire Department (Miami, Florida) (McKinnis (Ed.), 1998). These were the only such programs and were only vaguely similar in their dual-mission role and staffing to the Department. Due to the low number of these operations, an earlier considered research methodology of the writer to conduct a survey of dual fire and EMS operators was discarded due to the high number of sampling that would need to be done to be statically valid and because program differences would have probably of been of little assistance to the writer in development of the Plan.

## **RESULTS**

There were four research questions identified at the beginning of this paper.

1. After reviewing the history of the air operations program, what are the current policies and operations in place [Descriptive]?

Through first-hand knowledge of the writer, in-house documents and informal personal communications with the air operations staff a historical perspective was gained and expressed in the Plan regarding the current operations and what is most important, the “why” of the current air program.

1. What would be the method of presenting extensive information about a specialty subject such as air operations within the fire service to a cadre of executive level chief officers [Descriptive]?

The Plan was divided into topic areas and presented in such a manner that each topic area was considered a “stand alone” section so that the entire Plan would not have to be read in order to find some information or recommendation(s) on only a particular topic.

Inclusive of each topic section is that topic’s relevant background, current practice, any criteria or rationale if appropriate and finally the recommendation(s) for that topic area.

2. As part of a plan, what are the key points to offer as criteria in formulating recommendations to guide executive level chief officers in decision making about improvements to the air operations program [Evaluative]?

In each section of the Plan, major points to consider were discussed, appropriate criteria were identified if appropriate and the calculations and/or rationale were explained in order to substantiate each recommendation.

2. What would be the resulting document that would present the compilation of categories related to the air operations program to provide a concise overview, criteria and specific recommendations for the program [Action]?

The “Air Operations Overview and Plan” was completed for inclusion as Appendix A of this applied research project. Prior to submitting to the Executive Staff the writer plans to review portions of the Plan with the appropriate group of personnel in the air operations program for confirmation of facts, the consensus of observations and recommendations. Although this Plan is not to be considered as a “group” document the writer believes that the final product should have a sense of “validation” by the personnel it involves before being presented to Executive Staff. As described earlier by the writer the final version of the Plan will be in an easier to use tabbed and binder format. This attempt is to avoid a chronic problem with long length writing efforts in organizations and that is something else that is too big and too long to read that ends up collecting dust.

## **DISCUSSION**

### **STUDY RESULTS**

The final product of this applied research project was the “Air Operations Overview and Plan. As previously stated in this document there is an extremely limited amount of published material regarding fire service aviation programs. What few pieces are available are either outdated (1970's - 1980's) and based on some agency's or department's first aircraft, a short article about a particular program or a study of a specific technical aspect such as air tanker retardant drop grid studies.

### **INTERPRETATION AND EVALUATION**

The writer believes that this research has been very valuable in the development of the Plan. The process resulted in a useable body of information even though it is mainly based on in-house research and discussions rather than information provided from a large body of related published material. The writer believes that the Plan will now be a notable addition to the fire service literature due to the limited existing body of this specialty field of fire service aviation.

### **ORGANIZATIONAL IMPLICATIONS**

This research and resulting Plan accomplish four objectives:

(1) It completes an informal assignment given the writer upon his assignment as manager to

the Department's air operations program, (2) it most importantly provides an informational and options-based plan with recommendations to maintain the current high quality aerial firefighting and EMS service delivery to the public and the Department, (3) it provides a plan for air operations that has never existed in the forty year history of the air operations program, and (4) it provides a base document to be reviewed and revised for future use of air operations program planning.

## **RECOMMENDATIONS**

The recommendations of this applied research project are contained within, and at the conclusion of the "Air Operations Overview and Plan." The Plan will inform and advise the Executive Staff of decisions to be made to maintain and hopefully extend the air operations program support and accomplishment of the Department's mission to serve the public.

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# **APPENDIX A**

**LOS ANGELES COUNTY**

**FIRE DEPARTMENT**

***AIR OPERATIONS***  
***OVERVIEW & PLAN***

***1998 - 2010***

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**PREPARED**

**FEBRUARY 1998**

## **PREFACE**

This document is to assist the existing and future Executive Staffs of the Los Angeles County Fire Department by providing them an overview and plan for the Air Operations Section for at least the next decade.

This document is based on research from an extensive variety of sources and sites which includes research at various libraries of the University of Southern California - Los Angeles, California State University Long Beach and the Learning Resource Center of the National Fire Academy - Emmitsburg, Maryland. Sources include but are not limited to; aviation trade publications, State of California and United States Government publications and reports, aviation management courses and symposiums, Incident Command System courses, interviews and discussions with other air program operators and last but not least the valuable staff and personnel of the Air Operations Section of the Los Angeles County Fire Department.

This document has been developed based on my assignment for the past 18 months as the interim "Chief of Air Operations" by Deputy Fire Chief James "Jay" L. Corbett, Operations Bureau II, and our desire to have an improved planning tool about the Air Operations Section for all Department executive level managers. This document also completes a partial requirement for the author of an Applied Research Project for the 4-year Executive Fire Officer Program of the National Fire Academy - United States Fire Administration.

**BATTALION CHIEF JAMES HOLDRIDGE**

**BARTON HELIPORT - FEBRUARY 1998**

**TABLE OF CONTENTS**

<b>INTRODUCTION</b>	<b>1-2</b>
<b>HISTORY &amp; BACKGROUND</b>	<b>3-5</b>
<b>MISSION ORIENTATION</b>	<b>6-10</b>
<b>ADMINISTRATIVE OPERATIONS</b>	
- Legal Overview	11-12
- Reimbursable Flight Operations	13-14
- Manuals, Procedures and Guides	15
- Aviation Insurance	16
<b>ORGANIZATIONAL CHART</b>	<b>17</b>
<b>PERSONNEL &amp; STAFFING</b>	
- Maintenance Unit	18-24
- Pilot Staff	24-28
- Crewmembers	28-29
- Administrative	29-31
<b>AIRCRAFT FLEET</b>	<b>32</b>
<b>TRAINING</b>	<b>37</b>
<b>SUMMARY &amp; RECOMMENDATIONS</b>	<b>41</b>

## INTRODUCTION

The Air Operations Section of the Los Angeles County Fire Department has served the residents of the County and the Department for over 40-years beginning in 1947. In the beginning years there was aerial firefighting and then the addition of an emergency medical air mission with the focus on all missions being safety and quality service delivery.

At a time when the Los Angeles County Fire Department is experiencing unprecedented annexations into the District as well as a boom in population growth within the County and the jurisdictions that it serves, it is time to assess the air operations service that the Department provides. Although always on the cutting edge of fire service air operations and considered by others to be a standout quality program, only proper planning, implementation and support will keep the Air Operations Section as a quality provider of emergency air services.

It is unique in the American fire service that a local governmental fire department has any type of aircraft operation let alone an operation with the size and quality of our fleet and personnel. Nationwide, most firefighting air operations are seasonal efforts managed by state and federal departments and agencies responsible for wildland firefighting. Additionally, EMS air missions are most often provided and managed by hospital consortiums and private EMS operators.

The current increased emphasis on training by our Department on wildland fire and Incident Command System (ICS) training has also included presentations of air operations topics into internal publications, Management Training and ICS courses. Due to this emphasis the overall awareness and knowledge level of aerial firefighting and EMS operations among Department personnel will continue to increase. While this training effort will dissolve some of the “mysticism” of fire service air operations and the past lack of exposure within our Department to air operations, there will continue for many years to exist a void of experienced badged fire department managers who are “comfortable” with and prepared for air operations management.

The need for a “master plan” approach to Air Operations follows the fire service trend of resource allocation planning that includes fire station locations, apparatus type, staffing, etc. Although written to be reviewed in its entirety, this plan is written so that each topic section can be read and understood as a stand alone information source. The purpose of this document is to provide a heightened knowledge of the Air Operations Section and to provide a background, rationale, criteria, recommendations, and most of all a plan to the Executive Staff of the Department in which to base future decisions regarding the Air Operations Section.

## HISTORY & BACKGROUND<sup>1</sup>

### LOS ANGELES COUNTY FIRE DEPARTMENT - AIR OPERATIONS

- 1957 Roland J. Barton acquired from the Sheriff's Department as the first pilot along with a Bell Model 47 helicopter.  
  
Development in conjunction with the USFS-Angeles National Forest and first use of an attached fixed-tank (105 gallons capacity) supported by engine companies based at helispots for water supply. Also use of a hose-tray system that would unload 1,500 feet of 1-1/2" single jacket hose, or an attached rack system that would drop off rolls of hose along the flank of a fire.
- 1967 Purchase of second helicopter, a turbine powered Bell Model 204B with development of a larger 320 gallon fixed-tank.
- 1968 Purchase of a Bell Model Jet Ranger 206A for administrative and fire reconnaissance flights. As a result of a federal grant, a six-month pilot air ambulance program was evaluated by adding an EMS kit which allowed for a single litter patient with one pilot and one EMT fireman.
- 1970 Replacement of previous medium helicopters with Bell Model 205 which allowed an increase in capacity to the quick-connect, quick-fill fixed-tank to 360 gallons. This tank design and system became the standard "LA County Tank" and remains in production and use by private helicopter operators under state and federal firefighting contracts.
- 1973 The first paramedic "air squad" began service staffed with a pilot and two fire fighter/paramedics.

- 1975 April - Dedication and grand opening of Barton Heliport at the Pacoima Facility. New helicopter maintenance hangar, administrative offices and quarters for Air Operations.  
  
FLEET: 3-Bell Model 205's, 1-Bell Model 206B III Jet Ranger  
PERSONNEL: 4 pilots, 6 fire fighter/paramedics,  
4 maintenance unit portions.
- 1985 Establishment of a Reserve Physician Program to augment air squad staffing on selected weekends and holidays with volunteer emergency medicine trained physicians.
- 1989 Acquisition of the first Bell Model 412 helicopters to fleet. These are 4-bladed, twin engine aircraft equipped with rescue hoists and a modified EMS interior configuration.
- 1992 Establishment of an East San Gabriel Valley deployed air squad to support the County-wide Trauma Center System. Acquisition of two additional Bell Model 412 helicopters.
- 1994 The first year of a trial contract aircraft program to augment the aerial initial attack on wildland fires. The old National Guard Base fire station at the Van Nuys Airport was the site of the first Los Angeles County Fire Department Air Tanker Base.  
  
The first of a two-year formal evaluation of the Canadair CL-215T *SuperScooper* aircraft. Two aircraft were provided with a turn-key lease (aircraft, pilots, maintenance, parts, etc.) from the Province of Quebec, Canada. Senior Pilot Gary Bertz and Pilot Gary Lineberry served as onboard recorders, base managers and liaison between the Quebec pilots and the Department.
- 1995 Second and last year of formal written evaluation project of the CL-215T aircraft with Senior Pilot Gary Bertz and Pilot Gary Lineberry as the Van Nuys Air Tanker Base Managers.

- 1996 Third year contract with the Province of Quebec; one CL-215T and one CL-415. First year of shared-cost "Helitanker" *Erickson Air-Crane* (Type I "heavy" helicopter with snorkel-filled 2,000 gallon fixed-tank) with the Los Padres and Angeles National Forests. Air Tanker Base continues at the Van Nuys Airport, with Pilots Gary Lineberry and Vance Colvig as Base Managers using Copter 10 (Bell Model 206B-III) as Helicopter Coordinator.
- 1997 Fourth year contract with Province of Quebec; two CL-415, second year shared-cost Helitanker, and first year dedicated or "exclusive-use" contract for Los Angeles County Fire Department with *Erickson Air-Crane*. Air Tanker Base at Van Nuys airport relocated to "Million Air" facility on Balboa Blvd. and used detailed fire captains as Base Managers instead of pilots.
- 1998 FLEET: 1 - Bell Model 206B III Jet Ranger  
3 - Bell Model 205A's  
4 - Bell Model 412's with rescue hoists

#### PERSONNEL:

2 - Senior Pilots	1 - Air Captain (40-hour detail)
9 - Pilots	16 - Fire Fighter/Paramedics
1 - Senior Secretary	1 - Chief of Aircraft Maintenance
1 - Student Worker	1 - Helicopter Maintenance
(Utility Driver)	Inspector
1 - Chief, Air Operations	1 - Senior Helicopter Mechanic
(detailed battalion chief)	8 - Helicopter Mechanics

DAILY STAFFING: 1 - 24-hour Air Squad<sup>1</sup>  
2 - 10-hour Air Squads<sup>1</sup>  
1 - 10-hour Fireship<sup>2</sup> (during fire season)  
Additional ships as necessary year-round

#### DAILY DEPLOYMENT SITES:

Camps 8 & 9, Eastern Air Ops (EAO),  
Fire Station 129 (as weather dictates)

<sup>1</sup>

Staffing of 1-pilot, 2-fire fighter/paramedics

<sup>2</sup>

Staffing of 1-pilot, 1-fire fighter/paramedic; usually deployed at Camp 2

## **MISSION ORIENTATION**

The Los Angeles County Fire Department is the only air operations program of its kind now operating in the United States and probably the world. It is a unique multi-mission oriented public safety agency/department that shares an equal commitment to wildland firefighting, EMS and technical rescue with its own fleet of “standard category” type certificated helicopters. Most all other air operations programs have a single mission; i.e., firefighting, EMS, technical rescue, law enforcement, etc. that may involve a secondary mission.

- ◆ **RECOMMENDATION**      **The key to effective management of the Department’s air operations program is the focus on missions. If there are any revisions to the missions, all other aspects of the program must be considered and adjusted accordingly.**

The current missions of the Air Operations Section are as follows.

- **FIREFIGHTING**
  - The current firefighting mission is to provide a quick initial aerial attack on all reported wildland fires with at least two, preferably three of the closest medium (ICS Type II) helicopters of the Los Angeles County Fire Department and the Los Angeles City Fire Department utilizing the “1994 Joint City/County Helicopter Use Agreement.” This need is met with air squad equipped Bell Model 412's, or “fireship” Bell Model 205's, both equipped with fixed-tanks and Class “A” foam concentrate.

- The attack is focused on a rapid delivery of fixed-tank loads of water and Class “A” foam using strategically located and pre-identified engine company supported helispots. A short turnaround time between the fire and the helispot for the helicopters in combination with a water tank fill time of less than one-minute and planned 30-50 gallon refueling as needed provides a maximum effect.

As growth and development throughout the County continues, a priority of maintaining a County-wide helispot system is necessary in order to provide a water supply to helicopters or there could be a significant and noticeable decrease in the effectiveness of aerial attack on wildland fires. At this time there are approximately 108 helispots listed in the annual publication of the “Helispot Directory.”



#### **RECOMMENDATION      That helispots continued**

**to be maintained,**

**identified and relocated as needed on a battalion basis in order to ensure enough strategic predesignated helispots to provide for a constant water supply for helicopter fixed-tank operations on wildland fires.**

- A 1998 fire season pilot program to test a fireship equipped with a snorkel-filled fixed-tank may if effective, only provide another option for the helicopter fleet in certain areas of the County and is not considered to be an alternative to the proven concept and practice of engine company supported helispots.
- Another aspect of aerial firefighting is the delivery of at least one, preferably two helicopter “fly-crews<sup>1</sup>” to all initial attack wildland fires. Ever since the inauguration of paramedic air squad service for the East San Gabriel Valley in 1992, the fly-crew program of the Camps Section “lost” one of its dedicated fireships which continues to be inconsistent and controversial each fire season.

<sup>1</sup>

Fly-crew is a minimum of six paid camp hand crew personnel including the fly-crew supervisor that are equipped with PPE, hand and power tools and supplies to be deployed at wildland fires to create a line.

The multi-mission role of the 412 helicopters has EMS as the priority response and if a deployed helicopter is on an EMS run, the fly-crew at Camps 8, 9 or possible 2 do not have air transportation to a reported fire.

A determination regarding the true firefighting effectiveness and fireline safety of fly-crew personnel needs to be made by the Executive Staff of the Department. Is the emphasis and priority the immediate transport of a fly-crew to be deployed on an unsecured flank or head of the fire, or is the purpose of staffing fly-crews is to provide helicopter transportation of hand-crews to a remote or traffic congested part of the County (such as the Palos Verde Peninsula on a weekday afternoon at traffic time)?

The evaluation and decision to have dedicated fireship transportation available to all fly-crews are not seen to be a mission of the Air Operations Section, however not having a firm decision compromises mission priorities and personnel morale due to an unclear message.



**RECOMMENDATION      A final decision needs to be made by the**

**Executive Staff regarding the fly-crew program in order to have an orderly staffing and assignment of deployed helicopters each season, and so that wildland fire incident commanders can plan accordingly.**

- **EMS**
  - The current EMS mode of Air Operations is to have deployed paramedic equipped and staffed helicopters throughout the County. The role of the air squads is determined on a response-by-response basis. Due to the remoteness of some areas of the County, air squads can often be the first fire department units on-scene and initiate scene control along with patient assessment and treatment. Other responses may be the air transportation of critical patient(s) already treated by on-scene ground-based EMT and/or paramedics.

- **TECHNICAL RESCUE/SWIFTWATER**
  - Other air squad missions may include the technical rescue insertion of trained personnel to treat and extract patients via the rescue hoist, as well as landing to utilize other onboard rescue equipment and supplies.
  - During swiftwater team deployment the swiftwater-helo component is managed by the Air Operations Section.
- **ADMINISTRATIVE/RECONNAISSANCE/INFRA-RED IMAGERY**
  - The non-emergency transport of Department managers and County officials such as members of the Board of Supervisors in the course of conducting Department and/or County business.
  - The overflight of emergency incidents by incident managers and/or County officials.
  - Department Service Order (DSO) requests for non-emergency overflights for photography, videography, mapping, site familiarization, etc.
  - Any of these missions are accomplished with any of the helicopters in the fleet and are always secondary priorities to the primary priority of fire and EMS responses.
  - Infra-red imagery (IR) is accomplished by overflights of wildland fire incidents with a specially equipped IR camera and video recording system to provide more exact information to incident managers.
- **RESEEDING/HELITORCH/AERIAL IGNITION DEVICE**
  - These missions are scheduled in advanced of the date the service is needed and are identified as secondary priority missions to that of fire and EMS responses.

- These external load missions are currently completed by Copter 10, the Bell Model 206B Jet Ranger using a cargo hook mounted underneath the body of the helicopter. These missions can also be accomplished by the Bell Model 205 or 412 by removing the fixed-tank and installing a cargo hook.

- **HELICOPTER FLEET MAINTENANCE**

- The Maintenance Unit (MU) of the Air Operations Section is the key to the reliability and ever ready condition of our Department's seasonal mission demands of the helicopter fleet. Most all activities of the MU come under the regulation and scrutiny of the Federal Aviation Administration (FAA).
- There are seven activities that the MU is involved with on a year-round basis: (1) Mandated scheduled fleet maintenance, (2) unscheduled maintenance to the fleet, (3) aircraft avionic system installations and maintenance - radios, navigation, radar, etc., (4) helitender and helicopter fuel dispenser(s) maintenance, (5) special projects, e.g., fabrication, refurbishment, aerial seeding, helitorch and aerial ignition device support, etc., (6) helicopter parts and supplies inventory control, and (7) maintenance and housekeeping of the maintenance hangar and related maintenance facilities and maintenance motor vehicles.
- The year-round scheduled maintenance to the helicopters involves: (1) The number of "cycles" - the times that the engines are started, (2) flight time, and (3) calendar time, e.g., 1-year, 5-year, etc.

The MU utilizes an FAA approved practice of "progressive maintenance" to the helicopter fleet. This procedure minimizes down time of the helicopter fleet by allowing the MU to perform mandated scheduled maintenance in a staggered and incremental manner. This allows scheduled maintenance to be completed during the short durations of unscheduled maintenance work and lulls in the flight activity of the fleet.

## **ADMINISTRATIVE OPERATIONS**

### **LEGAL OVERVIEW**

The Los Angeles County Fire Department as a public safety air program operator is unique for two reasons: (1) Owning its own aircraft, and (2) using “standard category” type certificated aircraft. Most other public safety organizations use surplus military aircraft through the Federal Excess Personal Property (FEPP) Program. The primary advantage for our Department’s use of “standard category” aircraft in our fleet operations is the known safety and integrity of an aircraft and the continued maintenance and certified parts support by the manufacturer.

As an operator of aircraft the Department is responsible to the Federal Aviation Administration (FAA) with regards to aircraft ownership, registration, maintenance and flight operations. There are parts of both the Code of Federal Regulations (CFR) and the Federal Aviation Regulations (FAR) that must be complied with. At this time there is no specific FAR that addresses and mandates public service aircraft operators to certain requirements. There have been extensive and ongoing discussions, lobbying and FAA interventions to the possible formation and implementation of a FAR Part 92 to address operators such as our Department. As with most other FAA processes there is no expectation as to the future of this proposal or a time line.

Our current air operations are based on a combined use of the following FAR's either in part or in their entirety and should be considered to be legally acceptable, operationally sound and ethically well based for continued support by the Executive Staff of the Department:

- FAR Part 91

Prescribes the general flight rules for all aircraft operations within the United States, including the waters within three nautical miles of the U.S. coast.

INTENT: To have the pilot-in-command (PIC) operate only airworthy aircraft and states that the PIC is responsible and has the final authority as to the operations of the aircraft.

- FAR Part 133

Prescribes the airworthiness certification requirements for rotorcraft, and the operating and certification rules governing the operation of rotorcraft conducting external-load operations.

INTENT: To ensure that rotorcraft and PIC's are equipped, trained and certified to conduct external load missions; i.e., rescue hoist, helitorch, seeder, etc.

- FAR Part 135

Prescribes the maintenance and flight operations for government-owned aircraft that receive compensation from private and/or other governmental agencies/departments.

INTENT: To ensure compliance of airworthiness, equipment and pilot training for governmental operators that are to be compensated.

## REIMBURSABLE FLIGHT OPERATIONS

In 1995 Public Law 104-411 (“Pressler Bill” - Independent Safety Board Act Amendments) was enacted by Congress that significantly redefined what is “public aircraft” and the operations and use by governmental agencies and departments. The intent of this legislation which is mandated to be enforced by the FAA is to better separate the practice of government-owned aircraft “competing” with private sector aircraft operators and attempts to clarify the who, what and how of compensation.

The interpretation and impact to the Los County Fire Department are as follows:

- We may provide aerial services for ourselves and other departments of the County as long as we do not charge for the service.
- We may provide aerial services for other departments of County and charge for them, if there are no private operators that can provide the same service.

For example, the Department could provide inter-facility hospital air transfers and charge the Department of Health Services if there was no private operator to provide the service within a “reasonable” period of time. [Currently there is only one private air EMS operation operating within and around Los Angeles County, Mercy Air based out of Fontana with several helicopter deployment sites].

- We may provide and charge for services to any governmental unit when “there is a significant and imminent threat to life or property, including natural resources” where no service by a private operator was readily available to meet the threat.

An example is when the Angeles National Forest requests us to provide infrared (IR) mapping service for their fires. As part of the “Pressler Bill” compliance, any time another governmental unit requests air services from another governmental unit for non-emergency missions, the requesting unit must provide a signed “imminent threat” certificate request.

As of this time, the FAA has not violated or fined any public safety air operator for noncompliance of any part of the “Pressler Bill,” however it is currently monitoring two EMS air operations in Texas and Florida that may be the first test cases. The changes in public safety aircraft operations caused by the “Pressler Bill” have been initiated by lobbyists of contract aircraft operators in the United States. The intent is to decrease perceived competition by governmental air operators and the true long-term effects of the “Pressler Bill” remain to be seen.



**RECOMMENDATION      The Los Angeles County  
Fire Department**

**through its professional aviation memberships and affiliations as well as monitoring by the Department’s legislative analyst staff should continue along with committees, work groups and other appropriate activities to stay informed and participate when necessary to maintain our best interests as a public safety aircraft operator with a “standard category” type certificated fleet. Of particular interest should be regulations that affect aircraft, maintenance, operations and compensation (“Pressler Bill”).**

## MANUALS, PROCEDURES AND GUIDES

The Air Operations Section is currently supervised and managed by the following written documents:

### INTERNAL

- Los Angeles County Fire Departmental Library
- Air Operations Section “Operations Manual”  
(Training, skill and equipment SOP’s.)
- “Contract Aircraft Program Operating Plan”  
(All-inclusive document currently being written to address the management and operations of the Department’s seasonal contract aircraft program.)
- Air Operations Section “Aviation Operations and Safety Plan”  
(Document currently under development to provide written documentation of the current knowledge and practices of Department air operations including safety awareness and our aviation safety plan.)

### EXTERNAL

- Federal Aviation Regulations (parts as required and appropriate)
- All appropriate FAA advisories, bulletins, etc.
- Interagency Helicopter Operating Guide (HOG)

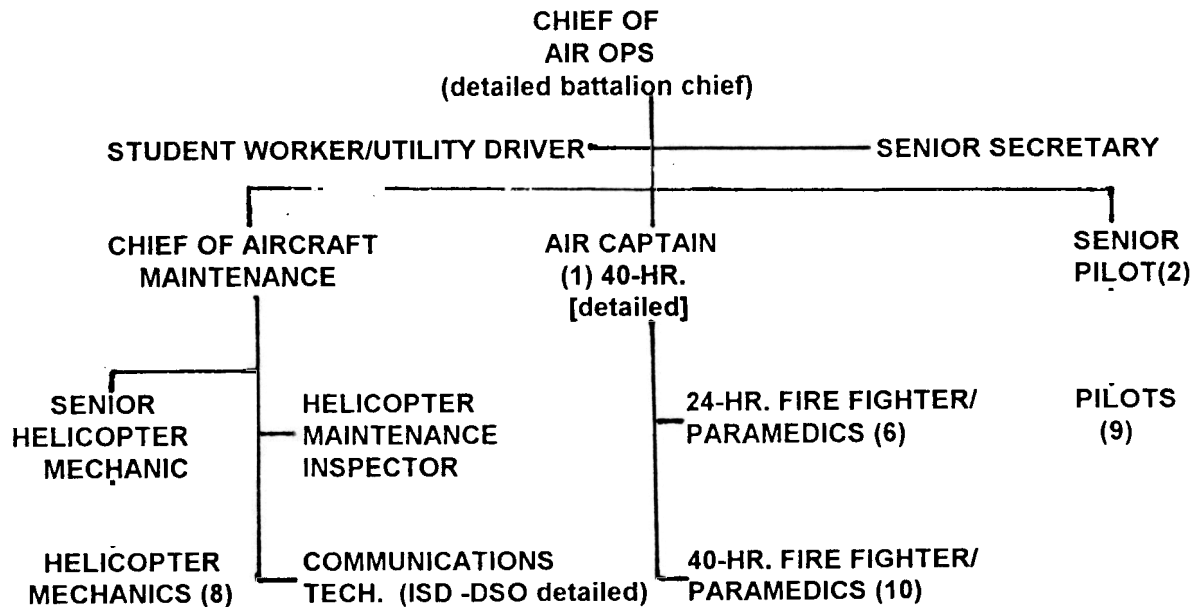
**RECOMMENDATION      To complete the development, writing, ongoing review and revision of the “Contract Aircraft Program Operating Plan” and the Air Operations Section “Aviation Operations and Safety Plan.”**

## AVIATION INSURANCE

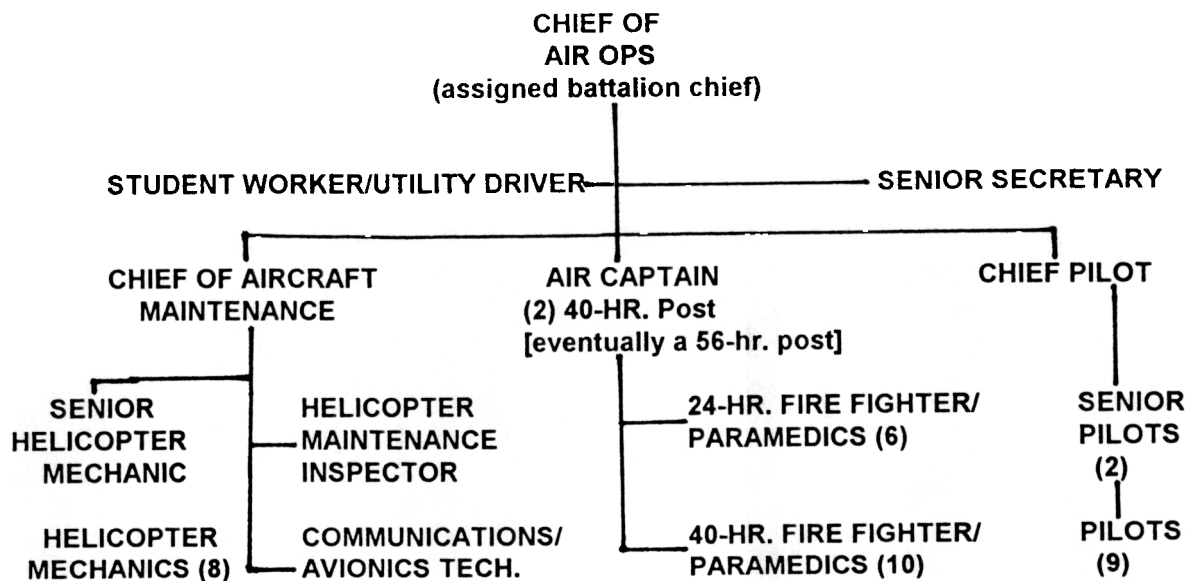
The Department's aircraft fleet and operations are insured by a combination aviation insurance policy with the Sheriff and Public Works Departments and is managed by the Chief Administrative Office (CAO) -Risk Management Operations (RIMA). This coverage includes aircraft hull, spare parts, liability and hull consequential loss. As of the last renewal in December 1997, the Department's fleet had an "agreed upon total value" of \$16,865,000. The insurance premium is paid by the Department as a Level 1 expenditure to CAO-RIMA.

# ORGANIZATIONAL CHART

CURRENT - FEBRUARY 1998



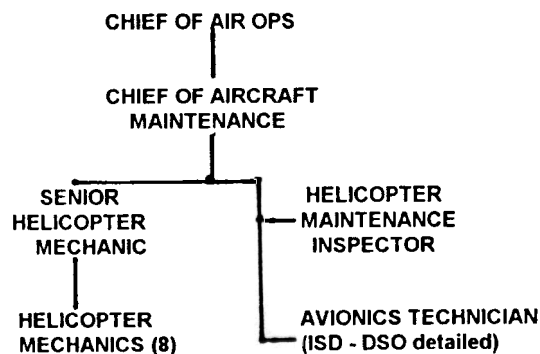
## PROPOSED



## PERSONNEL & STAFFING

This portion of the overview and plan includes a brief description of each of the employee groups and a perspective of that particular group including some target staffing ratios to base current and future staff planning.

### MAINTENANCE UNIT



The Maintenance Unit (MU) is supervised and managed by the Chief of Aircraft Maintenance position who is responsible to the Chief of Air Operations. The supervising position for the Helicopter Mechanics (HM) is the Senior Helicopter Mechanic who is a promoted HM.

The Helicopter Maintenance Inspector (HMI) is promoted from the HM with a prerequisite of having an "Aircraft Inspector" certification. This certification requires an initial training course with mandated continuing education and completion of aircraft inspections. It is the role of the Helicopter Maintenance Inspector to perform the mandated FAA function of having aircraft maintenance work inspected and aircraft fleet maintenance documented.

### Helicopter Mechanic

The MU entry level position of Helicopter Mechanic will be a person who has completed Airframe and Powerplant training and certification. This basic maintenance position training can be with fixed or rotary-wing aircraft. On-the-job training and experience with helicopters, particularly with Bell models that we operate is the preference for prospective applicants to our Department.

The last HM exam process was held in 1997 and resulted in an extremely poor filing of applications with only nine applications being accepted for the interview process. When completed, only two applicants were on the promulgated list even though the interview process content was the same as in past years.

What has occurred is that our MU is reflecting the industry-wide trend of there being more demand and an insufficient supply of aircraft workers and aircraft maintenance personnel. Although it is a study in itself, the short answer is that military downsizing, a reduction in private industry and college training programs and the highly volatile employment cycle of the aircraft manufacturing industry has resulted in a severe shortage of trained workers.

This industry situation in combination with some County history of our MU being formerly of the Sheriff's Department and now affiliated and represented with the motor vehicle mechanics and shops personnel has further resulted in a very non-attractive one-step salary, with no entry level step, no time and merit steps

and no longevity bonuses. An effort to remedy this situation is underway with thorough research, fact-finding and a presentation to the Executive Staff regarding the current and future of the MU personnel.

- **RECOMMENDATION** That the study and review related to the Helicopter Mechanic position should be completed and presented to Executive Staff, and within the boundaries of the County system of representation, bargaining units, labor/management negotiations, etc. a high priority be given to resolving as possible the salary and benefit inequities and related personnel issues.

#### Communications Technician

The current avionics (radio, navigation, radio, intercom, etc.) needs of the helicopter fleet including installation and repair work are completed by a detailed Communications Technician (Comm Tech) from Internal Services Department (ISD) as provided by an annual ISD - Department Service Order (DSO) services contract. When our fleet of helicopters was approximately four (prior to 1970), these basic communication equipment needs were met by the MU. At this time with a fleet size of eight helicopters and the larger quantities of aviation electronics involved and the MU focused on the increased maintenance needs of

the larger fleet, the Department has a severe need to acquire the full-time services of a qualified and FAA licensed avionics technician and FAA Repair Station<sup>1</sup>.

By having our own avionics repair station at Barton Heliport, we have the ability 24-hours a day to affect repairs along with the significant cost-savings to the Department by not having from to send out work for repair, calibration and replacement. The existing DSO with ISD does not guarantee the continued services of the currently FAA certified Comm Tech, ISD has no other FAA certified personnel that could replace the current detailed Comm Tech, and the DSO pricing for this detailed position is inappropriately high.

- **RECOMMENDATION      Although budgeted for several years, the Communications Technician (Avionics Technician) position remains unfilled at the Air Operations Section. Executive Staff should review the current situation and approve the funding to have this position filled as a Department item as soon as possible.**

#### Maintenance Inventory and Procurement

The supplies and parts inventory control needs of the MU are currently being met by one of the HM, with back up as necessary by another HM. This procurement oriented HM is actually one of the eight HM positions designated for

<sup>1</sup>

A facility, equipment, supplies and operator that is regulated and certified by the FAA to provide a "service" to aircraft.

helicopter maintenance. Although he assists with daily helicopter checks, special MU maintenance needs and coverage of the after hours “duty mechanic” schedule, 90% of his present time is directed toward the helicopter maintenance procurement process. This HM could easily spend 100% of his time with this always present need, as well as that of a “clerk” level position to assist with the paperwork.

The need to have on hand at all times a predetermined amount of parts and supplies is necessary in order to keep all of the other maintenance operations continuous without having a break in time for personnel “waiting” for parts. In addition to constantly monitoring the reorder of “standard” supplies and parts, specialized maintenance work requires special ordering, “shopping” for vendor services, supplies and parts, preparing for shipment core components, receiving shipments and tracking shipping along with the extensive check and balances paper trail of the 1.5 million dollars per year helicopter maintenance budget.

This inventory control and procurement function performed currently by the HM needs to be taken into consideration with the staffing needs of the MU. Even with the partial assistance of the student worker/utility driver position and Section secretary, the staffing requirements to meet the demands of the MU supplies and parts needs cannot be underestimated.

### Maintenance Unit Staffing Ratios

There are two criteria to assist in determining the appropriate staffing for helicopter maintenance: (1) Flight hours of the helicopter fleet by helicopter model type, and (2) maintenance required for each model type.

#### BELL MODEL 205 - Copters 14, 15, 16 (including 212 blade upgrade)

- Mechanic to helicopter “industry average” of 200-400 hours per year
  - 11-year Department annual flight hour average per Model 205 is 313 hours
  - $1.25 \text{ mechanics per helicopter} = 1.25 \times 3$   
**= 3.75 mechanics** (This includes benefit time off for one mechanic position)
- **Model 205 needs are 3.75 mechanics**

#### BELL MODEL 412 - Copters 11, 12, 17, 18

- Mechanic to helicopter “industry average” of 200-400 hours per year
  - 11-year Department annual flight hour average per Model 412 is 352 hours
  - $2 \text{ mechanics per helicopter} = 2 \times 4$   
**= 8 mechanics** (This includes benefit time off for two mechanic positions)
- **Model 412 needs are 8 mechanics**

#### ➤ **TOTAL ESTIMATED MECHANIC STAFFING RATIO** **Model 205 @ 3.75 + Model 412 @ 8 = 11.75 or rounded to 12**

- Department Model 412 mechanic staffing ratio when first delivered and for first few years was estimated to be 3.5 per helicopter.

- This estimate does not include the 90% time identified earlier in this overview and plan that one Helicopter Mechanic uses for inventory and procurement work.
- The total estimate of 12 mechanics should be applied against the current helicopter mechanic staff of 8. The three positions of Chief of Aircraft Maintenance, Senior Helicopter Mechanic and Helicopter Mechanic Inspector should not be considered as line helicopter mechanic positions.

- **RECOMMENDATION**      **The Operations Bureau management, or the Executive staff should review this issue and consider increasing the number of Helicopter Mechanics positions to place the staffing ratio at a more realistic level particularly in consideration that the number of flight hours for the helicopter fleet will be increasing in the future and that procurement and inventory control must be managed.**

## PILOT STAFF

### **CURRENT STAFFING PLAN   2-98**

CHIEF OF AIR OPS

SENIOR PILOT (2)

PILOTS (9)

The current staffing plan reflects the existing use of pilots within the Air Operations Section. The Department is unique as a public safety air operation that hires outside professional pilots and orients and trains them as members of Department to our mission work. The overwhelming majority of other public safety departments and agencies utilize private contract pilots, or train and use firefighter or law enforcement personnel trained to be pilots, such is the case with the Los Angeles City Fire Department. In addition to our Helicopter Maintenance Unit, the other strong point of our air program is the hiring of highly experienced professional pilots.

Our minimum selection requirements of 4,000 hours with a least 1,500 hours of mountainous flying continues to be an excellent criteria for entry level pilot applicants. The latest pilot exam process completed in February 1998, resulted in 90 applications, with 70 being scored for the top ten (or tied) selected for interviews and flight performance check rides.

Since the program began in 1957 through 1993, the manager of the Air Operations program has always been a promoted pilot. Currently the Air Operations Section is in its fifth year of a non-pilot "acting" manager. A separate position paper on this situation has been presented to the Executive Staff for further action and a final decision. The details and pros and cons of different options are contained within that document.

- **RECOMMENDATION**      **The Executive Staff should complete its review of the “Chief of Air Operations” document and should decide the long term management plans of the Air Operations Section as soon as possible in order to; (1) Reestablish and clarify the promotional track of pilots within our Department, (2) to improve employee morale of air operations, and (3) inform the Section personnel and implement the change(s) in an expeditious manner.**

#### Pilot Staffing Ratios

There has been for many years an inappropriate lower number of positions in the Air Operations Section for pilots of any rank (Pilot, Senior Pilot, Chief of Air Operations - Pilot) than what is necessary. Staffing the missions of the Department on a daily basis is one consideration, and other considerations include an increase in emergency incident activity (a variable not able to be scheduled), other pilots having benefit time off, unscheduled pilot time off due to “sick” and “industrial,” and training as well as the administrative responsibilities and duties of the Senior Pilots.

There are two criteria to assist in determining the effective and appropriate staffing levels for the pilot staff: (1) Staffing based on the per helicopter schedule (10-hour or 24-hour helicopter), and (2) staffing based on the median daily staffed helicopters.

### Staffing Based On Daily Per Helicopter Criteria

- 10-hours per day/7-days a week staffed helicopters require  
2.75 pilots per 10-hour helicopter staffed  
(includes pilot benefit time off, no "I" or extended "S")
  - The current daily missions of 2/10-hour helicopters per day means  $2 \times 2.75 = 5.5$  pilots
- 24-hours per day/7-days a week staffed helicopters require  
3.25 pilots per 24-hour helicopter staffed  
(includes pilot benefit time off, no "I" or extended "S")
  - The current daily missions of 1/24-hour helicopter per day means  $1 \times 3.25 = 3.25$  pilots
- Based on the current daily helicopter staffing of 1/24-hour and 2/10-hour helicopters there should:

2	10-hour helicopters	=	5.5 Pilots
1	24-hour helicopter	=	3.25 "
			-----
			8.75 or 9 Pilots

### ➤ **PILOT STAFFING RATIOS BASED ON PER COPTER STAFFING SHOULD BE:**

<b>10-HOUR HELICOPTER</b>	<b>=</b>	<b>2.75 PILOTS</b>
<b>24-HOUR HELICOPTER</b>	<b>=</b>	<b>3.25 PILOTS</b>

### Staffing Based On Median Daily Staffed Helicopters

- This criteria is based on the median, not average daily staffing of helicopters. Currently at three helicopters staffed daily per 6-months and four helicopters staffed daily for six months the average would be 3.5 helicopters. However, with fire incident activity level and/or swiftwater-helo deployment which can call for four ships per day in the "rainy" months and during the high fire incident activity up to six helicopters per day can be staffed, the median daily staffing would be estimated at a median of 5.

- The factor to apply to the median pilot staffing criteria is 1.75 to account for scheduled and unscheduled (“I” and “S”) pilot time off.
  - This calculated level is  $1.75 \times 5 = 8.75$  or rounded to 9

➤ **PILOT STAFFING RATIO BASED ON MEDIAN DAILY STAFFED HELICOPTERS SHOULD BE 9**

Both pilot staffing criteria methods estimate the need for nine pilot positions based on current daily helicopter missions and staffing. The current allotment of pilot positions is nine not counting the two Senior Pilot positions. Although the Senior Pilots are assigned flight duty when necessary, the ideal is to have the two Senior Pilots cover the 7-day a week schedule and complete administrative duties of the pilot staff and the Section.

- **RECOMMENDATION**      **Although the current allotment of pilot positions is correct based on two staffing criteria, any future changes in daily staffed helicopter missions should be reviewed and pilot staffing adjusted accordingly based on these criteria.**

## CREWMEMBERS (FIRE FIGHTER/PARAMEDICS)

CHIEF OF AIR OPS

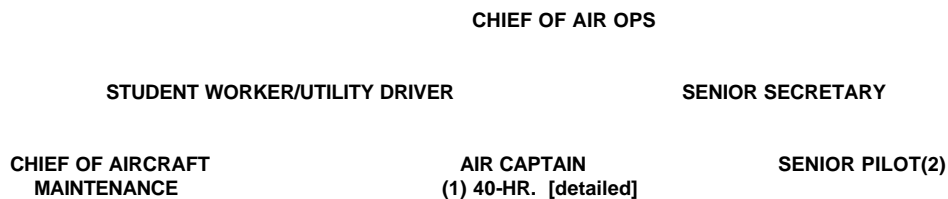
AIR CAPTAIN [(1) 40-HR. detail]

24-HR. FIRE FIGHTER/  
PARAMEDICS (6)

40-HR. FIRE FIGHTER/  
PARAMEDICS (10)

The current staffing of 16 fire fighter/paramedic positions within the Air Operations Section is consistent with the existing Memorandum of Understanding (MOU) bid transfer request system established between the Department and Union Local 1014. Bid transfers are based on the availability of vacancies in the 24-hour and 10-hour shift positions as well as management approved “mutual transfer” requests. Two staffing issues related to the fire fighter/paramedic positions are related to the supervision (Air Captain) and training requirements which will be discussed in those sections of this overview and plan.

## ADMINISTRATIVE



While other supervisor needs of the Air Operations Section are being met at an acceptable level, the single 40-hour detailed Department fire captain assigned to the “Air Captain” position continues to be inappropriate, inadequate and ineffective due to the workload. This position is responsible for, and is the formal supervisor of the currently assigned 16 fire fighter/paramedics. This not only exceeds our ICS emergency incident span-of-control rule of “5-7”, it also

exceeds the upper limit of administrative supervision/management ratio of "7-10" subordinates per supervisor or manager.

Although the daily workload of this detailed captain does not include all 16 personnel every day, the Department has made this one captain responsible as the supervisor of record for 16 annual performance evaluations. In addition to supervising, the captain is assigned as a "cardfile captain" to manage the daily, emergency and extraordinary staffing needs of the Air Operations Section. Even though this staffing role is shared with the on-duty Senior Pilot, the Senior Pilot may have other conflicting duties while handling the pilot staff, he may have flight duty and/or be absent due to other assignments or personal time off.

The captain must also manage the cadre of approximately 30 Department personnel on the Air Operations "Qualified Relief" List. The maintenance of this very necessary supplemental personnel pool to meet the needs of day-to-day staffing cannot be overstated. The MOU requires that not only should Department staffing procedures be complied with, but the necessary "currency" checks of the "Qualified Relief" personnel be maintained. Among other activities this means that each of the 30 personnel must complete or simulate at least one helicopter rescue hoist operation every 90 days. This currency requirement also applies to the 16 post position personnel.

In addition to staffing, and providing or supervising all training needs including mandated paramedic certification continuing education, the captain is

responsible as the designated “site supervisor” to manage and maintain the facilities of Barton Heliport. Additionally, this person is responsible for the motor fleet maintenance of the Section and other committee assignments, special projects and individual training needs as necessary along with being entitled to take off on personal benefit time off including unscheduled sick time.

The demands of this 40-hour per week Air Captain position have been consistently demonstrated to me during my 18-month assignment as the manager of Air Operations. The demands far exceed the availability of time of the currently detailed captain, despite my observation that he is above average in his time management skills and effectiveness as a supervisor. His time is so limited that although I do delegate some of the Section business to him, I know I am performing tasks and assignments that he does not have time for, and business which is not appropriate to delegate to the other supervisors within the Air Operations Section.

◆ **RECOMMENDATION** That Operations Bureau level management, or the Executive Staff review this situation and not only consider the immediate permanent filling of the 40-hour detail position, but providing a second 40-hour fire captain for 7-day a week coverage and supervision. It is highly recommended that a review to establish a 56-hour post position captain be considered to provide 24-hour per day, 7-day a week site supervisor staffing.

## AIRCRAFT FLEET

The current helicopter fleet consists of three different Bell model helicopters as follows:

			<u>Market Value 2-98</u>
BELL MODEL 206B-III (ICS Type III, light)	Copter 10	1978	\$375,000-\$400,000
BELL MODEL 205A-1 (ICS Type II, medium)	Copter 14	1976	\$1.25 - 1.5 million
	Copter 15	1972	“
	Copter 16	1972	“
BELL MODEL 412 (ICS Type II, medium)	Copter 11	1981	\$2.55 - \$2.75 million
	Copter 12	1981	“
412 HP	Copter 17	1992	\$3.6 - \$3.8 million
412 HP	Copter 18	1992	“

## FLEET OVERVIEW

All seven of the medium helicopters are equipped with the 360 gallon “L.A. County Tank” which includes a 17 gallon Class “A” foam concentrate tank. The four Model 412 helicopters are equipped as the paramedic air squads with rescue hoists, on-board oxygen and suction systems as well as a standard load of portable EMS equipment and supplies and technical rescue equipment. When a Model 412 is unavailable due to maintenance, a Model 205 is reconfigured and equipped as a paramedic air squad with the exception of the rescue hoist. If a

technical rescue response occurs when a Model 205 is staffed as an paramedic air squad, a Model 412 with hoist is dispatched as a second helicopter.

The Model 412's were selected to upgrade the helicopter fleet for EMS missions due to their twin engine reliability, greater speed, smoother quieter flight and other technological advancements over the older "Huey" style Bell Model 205 helicopters. In 1998 the last of the three Model 205's was converted to a Model 212 rotor blade system that allows approximately 700 pounds more of lift depending on other operational variables as air temperature, altitude and fuel load.

Copter 10 has served a minimal role in the operations of the Department with an 11-year average of 93 hours of use per year. The annual average for the last three years including a season based at the Van Nuys Air Tanker Base as Helicopter Coordinator used only 37 hours. Its missions have involved light external load work such as reseeding and use of the aerial ignition device in addition to administrative flights by County Board of Supervisors members.

Due to its low use, a much needed avionics upgrade project of most importantly radios and an intercom system has never been completed. As of the last estimate in 1997 of approximately \$68,000, no decision has been reached by Executive Staff regarding approval or funding of this upgrade which would be needed to effectively and safely use Copter 10 in the future for incident reconnaissance, aerial observer, etc.

In consideration of the cost of the avionics upgrade, the continued low annual usage, the need to provide currency training to the pilot staff, costs of insurance, the maintenance inventory and the fact that all missions of Copter 10 could be accomplished with the Model 205 or 412 helicopters, it would be prudent to acquire the services of an aviation broker and sell Copter 10.

- **RECOMMENDATION**      **Due to recurring annual costs, potential high cost of an avionics upgrade and the continued low annual usage rate, it is recommended that Copter 10 be sold.**

#### FLEET UPGRADE

There is currently no model or helicopter development project in the helicopter industry that has the potential to offer any better alternative and more desirable helicopter in the medium-size helicopter market that can serve our multi-mission role of EMS and firefighting than the Bell Model 412. This consensus feeling of the Air Operations Section pilot and maintenance staff is well supported with industry publications and presentations. Any future purchases of helicopters to the fleet for additional paramedic air squad service should be the Bell Model 412 "EP" equipped for our use at a current new sale price of approximately \$6 million.

Although the Model 205's could be phased out and replaced by additional Model 412's into the fleet, the 205's continue to be the real “work horses” of our firefighting operations. The 205's consistently perform with low downtime and with the 212 blade conversion have made them even more effective for fly-crew transportation and firefighting. If “more” firefighting is desired, the alternative is to convert all three Model 205's from the standard “13” engine to the more powerful “17B” engine. This has been done by other Model 205 operators within the wildland firefighting “industry” of private operators and other firefighting organizations.

Although there would be an increase in scheduled maintenance and maintenance costs, there would be a clear benefit to combining this proven higher shaft horsepower engine with the completed 212 rotor blade conversion project of the 205's. The effect seen on fires would be an increased cruise speed resulting in shorter on-scene times and a decrease in turnaround times on fire incidents with more water delivered each trip.

The current six “13” engines (3 installed, 3 spares) would be rebuilt over a phase-in period of approximately 18-months. Details of this conversion will be presented in a separate document to Executive Staff however the approximate cost increase over a currently performed major rebuild cost per “13” engine to rebuild and convert to a “17B” engine is only \$150,000.

- **RECOMMENDATION** For maximum utilization of the current helicopter fleet and in consideration of future additions to the fleet, it is recommended to Executive Staff that Bell Model 412-EP's be purchased to meet the future expansion of additional paramedic air squad service. For firefighting, the current Model 205's should be retained in the fleet and converted to the more powerful "17B" engine.

#### OTHER AIRCRAFT ALTERNATIVES

As the Department continues its seasonal contract aircraft program in an attempt to find an effective and efficient combination of quantities and aircraft types to augment initial attack, some aircraft manufacturers will present our Department with opportunities to purchase these aircraft. The firefighting side of purchasing other aircraft will need to be balanced with the business side considerations. Such considerations include; pilot and maintenance training, flight operations and Maintenance Unit modifications of operations, parts inventory, tooling, etc.

- **RECOMMENDATION** If the Department considers the purchase of any other aircraft, the consideration should be what gain in firefighting will be accomplished for the cost, not for any improvement for EMS missions. If other aircraft are purchased for firefighting, the Bell Model 205's should be phased out of the fleet.

## TRAINING

Training for all personnel assigned to the Air Operations Section should remain a priority to maintain a safe, effective, efficient and model multi-mission air operation. The following is a brief overview and any needs for the specific groups within Air Operations.

### PILOT STAFF

- Newly hired pilots complete our “Pilot Training Manual” and all flight performance checklists during their 6-month probation.
  - Every other year the pilots attend the four-day “Flight Safety International” safety and Bell Model 412 simulator course in Texas. This world renown program is the best education that our Department can provide to our pilot staff.
  - Every other year a Bell “factory” pilot attends Barton Heliport to provide check rides with the entire pilot staff in our Model 205's and 412's.
  - The Helicopter Association International annual conference offers a variety of pilot oriented symposiums and multi-day courses that we continue to support by sending selected members to the different presentations in a “train-the-trainer” concept.
  - Other appropriate topic specialty presentations and courses as available.
- **RECOMMENDATION      That the Department continue to support the existing pilot training program to maximize the safety and performance of our professional pilot staff.**

## CREWMEMBERS (FIRE FIGHTER/PARAMEDICS)

- Upon receiving a transfer into Air Operations all fire fighter/paramedics (FF/PM's) are assigned to a 40-hour schedule and presented a 64-hour "Air Operations Qualifications Training Program".

After completion of this course they are assigned to ride-along shifts to practice and demonstrate the skills including rescue hoist operations taught during the course. With final approval they are then assigned to the duty schedule.

- Every 90-days each FF/PM must either complete or simulate a rescue hoist operation or simulate one to remain current.
- As with all other FF/PM's on the Department, they must stay current with their mandated paramedic continuing education.

It is the desire of Air Operations Section personnel with the support of the Technical Operations Section to train all Air Operations crewmembers to a revised and higher minimum standard level of training in order to provide better service delivery via air throughout the County. Although an MOU issue, the proposed training would include the following:

- A revised 50-hour "Air Operations Qualifications Training Program"
- "Rescue Systems I Course"
- "Swiftwater I Course"
- "Trench Rescue Course"

- **RECOMMENDATION**      **To have the Department meet and confer with Union Local 1014 to revise the pre-requisites to a bid transfer and the initial training provided to Air Operations crewmembers to include the revised training curriculum as recommended by the Air Operations and Technical Operations Sections.**

#### **MAINTENANCE UNIT**

- After hiring, during probation and after passing probation a Helicopter Mechanic will have on-the-job training to our maintenance operation and the specifics of our helicopter fleet.
- There are factory school courses for fleet mechanics to attend to provide formal training and updates about airframe, engine and related systems.
- The Helicopter Association International annual conference offers a variety of maintenance oriented symposiums and multi-day courses that we continue to support by sending selected members to the different presentations in a “train-the-trainer” concept.
- Other appropriate topic specialty presentations and courses as available including maintenance program operations training, FAA maintenance updates and record keeping, etc.
- **RECOMMENDATION**      **That the Department continue to support the existing maintenance unit training program to maximize the safety and performance of our professional helicopter maintenance staff.**

## ADMINISTRATIVE STAFF

It is the intent to make available to the secretarial, clerical and student worker staff members that training that would be appropriate for improved job performance and career growth. The Air Captain position(s) would also be provided the opportunity to attend mandated as well as optional training related to their duties and responsibilities to the Air Operations Section and the Department.

## SUMMARY & RECOMMENDATIONS

### SUMMARY

It has been the intent of this document to provide sufficient background and overview of our Department's air operations program for the current and future members of the Executive Staff who will be responsible for decisions affecting the Air Operations Section well into another decade. Some of the specifics may become dated, however the information and specific recommendations should provide a competent guide and base of information.

Although some members of the Executive Staff may have private or military pilot flight experience which may prove helpful in the decision-making, it cannot be over emphasized that our Department has, and probably will continue to have a significant and multi-million dollar per year air operations program that in size, budget and mission would rival many aircraft fleet operations.

As stated earlier in this document, "the key to effective management of the Department's air operations program is the focus on missions. If there are any changes to the missions, all other aspects of the program must be considered and adjusted accordingly". Finally, a very appropriate closing is to share a current and valuable theme regarding aviation management that is being presented nationwide and is endorsed by the federal firefighting agencies and departments and that is the concept of an "aircraft use" triangle that has as its three sides; **"SAFETY, COST-EFFECTIVE and RIGHT"**.

## RECOMMENDATIONS

The following are the 17 recommendations as stated throughout this document and listed by the various topic areas of the preceding overview and plan. Page numbers for each recommendation are also listed in order to refer and review the supporting rationale and criteria for the recommendation.

### MISSION ORIENTATION

- ◆ **RECOMMENDATION** The key to effective management of the Department's air operations program is the focus on missions. If there are any revisions to the missions, all other aspects of the program must be considered and adjusted accordingly. (Page 6)
- ◆ **RECOMMENDATION** That helispots continued to be maintained, identified and relocated as needed on a battalion basis in order to ensure strategic predesignated helispots to provide for a constant water supply for helicopter fixed-tank operations on wildland fires. (Page 7)
- ◆ **RECOMMENDATION** A final decision needs to be made by the Executive Staff regarding the fly-crew program in order to have an orderly staffing and assignment of deployed helicopters each season, and so that wildland fire incident commanders can plan accordingly. (Page 8)

### ADMINISTRATIVE OPERATIONS

- ◆ **RECOMMENDATION** The Los Angeles County Fire Department through its professional aviation memberships and affiliations as well as monitoring by the Department's legislative analyst staff should continue along with committees, work groups and other appropriate activities to stay informed and participate when necessary to maintain our best interests as a public safety aircraft operator with a "standard category" type certificated fleet. Of particular interest should be regulations that affect aircraft, maintenance, operations and compensation ("Pressler Bill"). (Page 14)

- ◆ **RECOMMENDATION** To complete the development, writing, ongoing review and revision of the “Contract Aircraft Program Operating Plan” and the Air Operations Section “Aviation Operations and Safety Plan”. (Page 15)

## **PERSONNEL & STAFFING**

- ◆ **RECOMMENDATION** That the study and review related to the Helicopter Mechanic position should be completed and presented to Executive Staff, and within the boundaries of the County system of representation, bargaining units, labor/management negotiations, etc. a high priority be given to resolving as possible the salary and benefit inequities and related personnel issues. (Page 20)
- ◆ **RECOMMENDATION** Although budgeted for several years, the Communications Technician (Avionics Technician) position remains unfilled at the Air Operations Section. Executive Staff should review the current situation and approve the funding to have this position filled as a Department item as soon as possible. (Page 21)
- ◆ **RECOMMENDATION** The Operations Bureau management, or the Executive staff should review this issue and consider increasing the number of Helicopter Mechanics positions to place the staffing ratio at a more realistic level particularly in consideration that the number of flight hours for the helicopter fleet will be increasing in the future and that procurement and inventory control must be managed. (Page 24)
- ◆ **RECOMMENDATION** THE Executive Staff should complete its review of the “Chief of Air Operations” document and decide the long term management plans of the Air Operations Section, inform the Section personnel and implement the change(s) in an expeditious manner. (Page 26)

- ◆ **RECOMMENDATION** Although the current allotment of pilot positions is correct based on two staffing criteria, any future changes in daily staffed helicopter missions should be reviewed and pilot staffing adjusting accordingly. (Page 28)
- ◆ **RECOMMENDATION** That Operations Bureau level management, or the Executive Staff review this situation and not only consider the immediate permanent filling of the 40-hour detail position, but providing a second 40-hour fire captain for 7-day a week coverage and supervision. It is highly recommended that a review to establish a 56-hour post position captain be considered to provide 24-hour per day, 7-day a week site supervisor staffing. (Page 31)

## **AIRCRAFT FLEET**

- ◆ **RECOMMENDATION** Due to recurring annual costs, potential high cost of an avionics upgrade and the continued low annual usage rate, it is recommended that Copter 10 be sold. (Page 34)
- ◆ **RECOMMENDATION** For maximum utilization of the current helicopter fleet and in consideration of future additions to the fleet, it is recommended to Executive Staff that Bell Model 412-EP's be purchase to meet the future expansion of additional paramedic air squad service. For firefighting, the current Model 205's should be retained in the fleet and converted to the more powerful "17B" engine. (Page 36)
- ◆ **RECOMMENDATION** If the Department considers the purchase of any other aircraft, the consideration should be what gain in firefighting will be accomplished for the cost, not for any improvement for EMS missions. If other aircraft are purchased for firefighting, the Bell Model 205's should be phased out of the fleet. (Page 36)

**TRAINING**

- ◆ **RECOMMENDATION** That the Department continues to support the existing pilot training program to maximize the safety and performance of our professional pilot staff. (Page 37)
  
- ◆ **RECOMMENDATION** To have the Department meet and confer with Union Local 1014 to revise the pre-requisites to a bid transfer and the initial training provided to Air Operations Crewmembers to include the revised training curriculum as recommended by the Air Operations and Technical Operations Sections. (Page 39)
  
- ◆ **RECOMMENDATION** That the Department continues to support the existing maintenance unit training programs to maximize the safety and performance of our professional helicopter maintenance staff. (Page 39)

**END OF DOCUMENT**